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Appendix V

[Vide answer to question No. 52 asked by Mr. T. Adinarayana Chettiyar at the meeting of the Legislative Council held on the 3rd September 1928, page 50 supra.]

I

Preliminary report on the Melarasampattu project, Odugathur valley, Vellore taluk, North Arcot district.

Situation.—The site proposed is about one mile to the south of Melarasampattu village, Vellore taluk—across a jungle stream flowing down between two ranges of hills in reserved forest.

A tank may be formed here by bunding up across bund between the two hills in S. Nos. 23, 24 and 25 with a high bank about 50 feet high over the fields with necessary sluices and a surplus escape on the west.

Catchment.—It will have a free catchment basin of 29·19 square miles with 30 feet depth of water over sill of sluice in the tank.

Capacity.—The capacity of the tank will be 113 million cubic feet and with two fillings the annual storage will be 226 million cubic feet which at 0·16 million cubic foot per acre can irrigate about 1,400 acres in the limits of Melarasampattu, Vennantangal and Katterikuppam villages—700 acres in Melarasampattu, 350 in Vennantangal and 350 in Katterikuppam which are all cultivated dry at present.

Rainfall.—There is no rainfall station in the catchment basin. There is one on the hills at Komatiyur which is beyond this basin in the other valley towards Polur, while the other one at Pallikonda is far below in the plains. The rainfall readings at Komatiyur taken periodically once in some days are only approximate. The annual average rainfall as observed at Pallikonda from 1915 to 1924 is 33·08 inches. The average rainfall for the same period during the monsoon months from June to November is 26·98 or say 27 inches. Taking the catchment as an average one for calculating the run-off as per tables on page 22 of the Irrigation Manual by Colonel Ellis, the yield of run-off per square mile is 10·77 million cubic feet, and the total yield = 29·19 × 10·77 or 314·37 million cubic feet against the proposed annual storage of 226 million cubic feet. This leaves a good margin for further improvement and the extension of cultivation, if possible, later on. The catchment is hilly and fully overgrown with thick forest. Assuming a C.B. duty of 50 acres per square mile the tank can command 29 × 50 or 1,450 acres.

The approximate cost of the proposed tank will be Rs. 1 lakh.

Ayacut proposed is 1,400 acres. The extra revenue per acre is Rs. 5 per acre.

Extra revenue on 1,400 at Rs. 5 per acre = Rs. 7,000. The annual maintenance and monsoon damage charges to the tank comes to Rs. 1,100. Deducting this from total revenue of Rs. 7,000, net revenue will be Rupees 7,000 — 1,100 or 5,900, yielding 5·9 per cent on outlay.

The site now proposed is one of several sites in the locality and this is considered to be the cheapest of all.

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During normal years of rain the supply from the catchment basin will be adequate.

The bed of the proposed tank and the sub-soil along the alignment of the bank are of clay and retentive.

The surplus can be safely disposed of over a masonry weir on the left, and distributary channels for irrigation can be easily and economically formed along the hills from the tank to the proposed ayacut below. There is no big cross drainage to be dealt with, except perhaps one at Omayampattu on the right of the stream which has not been inspected by me.

A. W. NIGHTINGALE,
30*th March* 1927. *Executive Enineer, North Arcot Division.*

II

Letter from A. W. NIGHTINGALE, Esq., Executive Engineer, North Arcot division, Vellore, to the Superintending Engineer, Coimbatore Circle, Coimbatore, dated 1st April 1927, No. 356-S.E.

[SUBJECT.—Melarasampattu project, Odugathur valley, Vellore taluk.]

[*Reference.*—Your No. 664-N.A., dated 10th/11th November 1926.]

Before answering the various points in your letter I would draw your attention to a fact which has been brought to my notice during recent months.

Under present conditions it seems to me that we are not justified in tapping any of the water which would flow down to the Palar. Government has undertaken to supply a very large ayacut under the channels taking off from the Palar anicut and yet some of the tanks, particularly those on the right bank, have received absolutely no water from the system for very many years.

The project under discussion will hold up a considerable quantity of water which would otherwise flow into the Palar, although it seems a fairly good proposition in good years from the point of view of the land to be irrigated. I think that it should be considered whether this and other similar project should be dropped, out of consideration for the ayacut under the Palar Anicut system.

When inspecting we noticed that there was a depression down which the water from surplus would flow, but in order to verify this I have had levels taken from which it will be seen that a small protected training bank will be necessary.

The construction of a masonry dam throughout instead of an embankment with a surplus escape will be prohibitively costly especially in such an out of the way place.

The interested ryots say that they are unable to pay any contribution to the work being poor.

The lands to be cultivated wet are said to be suitable for the purpose, the soil is retentive and there is demand for wet cultivation by the interested ryots in the locality.

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Kidampalayam tank.—This tank has a free basin of 2·75 square miles with one upper tank and its combined catchment is 4·5 square miles (as per Tank Restoration Scheme Memoir, Polur Minor basin) with a maximum flood discharge of 1,342 cusecs, for which the calculated free basin as per formula C. m. 2/3 (Where C = 550) is 3·8 square miles. The ayacut under it is 155 acres. The tank is supposed to get three fillings a year (vide Tank Restoration Scheme Memoir), but as per Tank Restoration Scheme Memoir catchment area the C.B. duty works out to 40 only. Taking other tanks similarly situated at the foot of the hills.

(1) Kadaladi Periya eri of Mambakkam eri group (page 276 of Polur Minor basin), area of free basin 6·7 square miles, against 332 cusecs as per revenue list of irrigation sources.

(2) No. 6 Turingi Kuppam Periya eri of Vadamadimangalam eri group (page 396 of Polur Minor basin), area of free basin 4·3 square miles, ayacut 200 acres.

In these two cases the C.B. duty works to more than 50. It is further pointed out that these tanks are situated at the foot of the hill, whereas the proposed tank is in the midst of hills and several miles above the foot of the same, so a C.B. of 50 may safely be assumed.

No sketches are prepared for masonry works pending approval of site, further investigation and decision of designs, etc.; only approximate lump sums are allowed.

III

Letter from the Superintending Engineer, Coimbatore Circle, to the Chief Engineer for Irrigation, dated 14th April 1927, No. 177 I.

[Melarasampattu project—Odugathur valley.]

I forward herewith preliminary plans and estimate amounting to Rs. 1,00,000 to form a tank in Odugathur valley above the village of Melarasampattu. The preliminary report accompanying the estimate deals with the details of the scheme.

On scrutiny of the preliminary proposals the points raised in this office No. 664-N.A., dated 11th November 1926, were as regards (1) feasibility of surplus escapes, (2) whether a masonry dam would suit the site better, (3) whether any contribution can be expected from the ryots, (4) whether the lands proposed to be brought under wet are suitable for wet cultivation and (5) whether catchment basin duty as 50 acres is based on existing irrigation works in the vicinity. The Executive Engineer's reply No. 356-S.E., dated 1st April 1927, furnishes information on all these points.

In the circumstances detailed by the Executive Engineer and in view of the facts (1) that the tract is malarial, (2) that the ryots are poor and (3) that except in years of good rainfall the proposed reservoir would be detrimental to the interests of the existing irrigation under the Palar Anicut system, the proposed scheme does not appear to be a remunerative one.

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Endorsement by the Chief Engineer for Irrigation No. 4307/25-*B*-6, *dated the* 9*th August* 1927.

Apart from the question of the proposed reservoir curtailing the already poor supply in the Palar the scheme itself does not appear to be remunerative. The cost is roughly estimated by the Executive Engineer at Rs. 1 lakh, but the provisions are very approximate and may have to be raised when detailed plans and estimates are prepared. A preliminary examination of the estimate in this office discloses that the estimate amount may go up to Rs. 1·66 lakhs for "works" only and including establishment and tools and plant and indirect charges, the cost is not likely to be less than Rs. 2·12 lakhs. The revenue realizable from the scheme adopting the higher water-rate of Rs. 6 per acre proposed by the Collector would be Rs. 8,400 and deducting maintenance and collection charges, the net revenue would be Rs. 6,930 which would give a return of only 3·26 per cent on the outlay. The scheme is thus unremunerative. I agree with the Superintending Engineer that in the circumstances the scheme may be dropped.

R. F. STONEY,
Chief Engineer for Irrigation.